Graph the following without a calculator

(a) $f(x) = \dfrac{x^2-9}{x^2-2x-3} = \dfrac{(x-3)(x+3)}{(x-3)(x+1)}$

hole at $x=3$

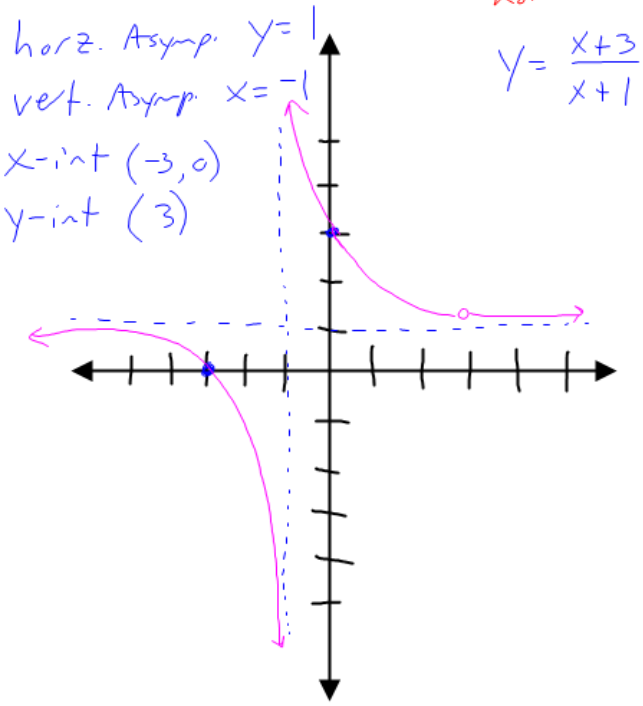
$y = \dfrac{x+3}{x+1}$

horz. Asymp. $y=1$

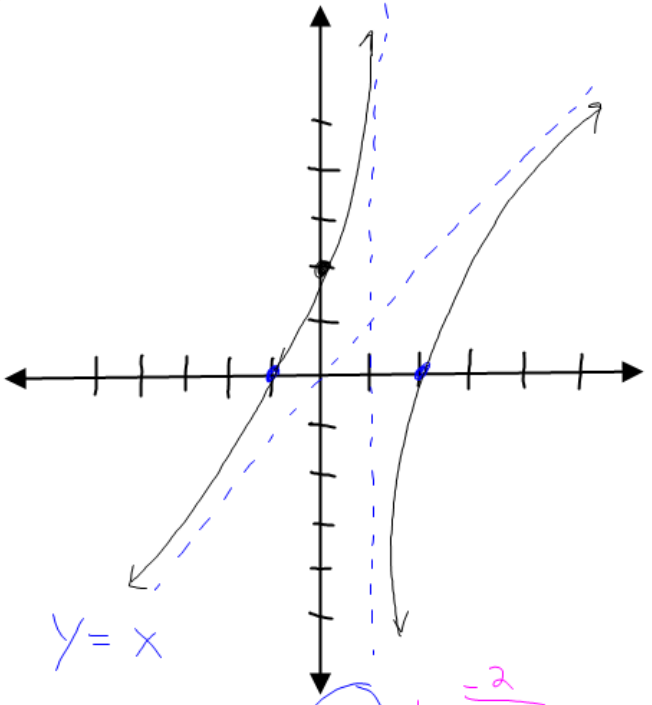
vert. Asymp. $x=-1$

x-int $(-3,0)$

y-int (3)



(b) $f(x) = \dfrac{x^2-x-2}{x-1} = \dfrac{(x-2)(x+1)}{(x-1)}$



$y = x$

$x + \dfrac{-2}{x-1}$

$x-1 \;\big|\; x^2-x-2$

x^2-x

$0+0-2$

Slant Asymptote

Intercepts

x-int → zeros of top

y-int → $x = 0$

Asymptotes

- horizontal → 3 rules p. 144
- vertical → zeros of bottom
- Slant → if n is 1 bigger than m, then long divide and ignore remainder

Sect. 2.7

9-25 (odd)

43-47 (odd)

Don't use calc.